WHAT IS CLAIMED IS:

1. A method for forming silicon quantum dots comprising the steps of:

forming a first insulating film on a semiconductor substrate;

forming a plurality of nano-crystalline silicons on the first insulating film;

forming a second insulating film on the first insulating film including the nano-crystalline silicons;

partially etching the second insulating film and the nano-crystalline silicons; and

oxidizing surfaces of the nano-crystalline silicons.

2. The method of claim 1, wherein the nano-crystalline silicons are formed at a size of about 30nm.

3. The method of claim 1, wherein the second insulating film and the nano-crystalline silicons are etched by etching the nano-crystalline silicons by about 10nm.

4. The method of claim 1, wherein the nano-crystalline silicons are oxidized by about 5nm.

5. A method for fabricating a nonvolatile memory device comprising the steps of:

forming a tunnelling insulating film on a semiconductor substrate;

forming a plurality of nano-crystalline silicons on the tunnelling insulating film;

forming a first insulating film on the tunnelling insulating film including the nano-crystalline silicons;

partially etching the first insulating film and the nano-crystalline silicons;

oxidizing surfaces of the nano-crystalline silicons;

forming a second insulating film on the first insulating film including the nano-crystalline silicons;

forming a control gate on the second insulating film;

removing the second insulating film, the nano-crystalline silicons, and the tunnelling insulating film using the control gate as a mask; and

forming impurity regions in a surface of the semiconductor substrate at both sides of the control gate.

6. The method of claim 5, wherein the nano-crystalline silicons are formed at a size of about 30nm.

7. The method of claim 5, wherein the second insulating film and the nano-crystalline silicons are etched by etching the nano-crystalline silicons by about 10nm.

8. The method of claim 5, wherein the nano-crystalline silicons are oxidized by about 5nm.